

## Geographical variation of *Amplypterus panopus* (Cramer) (Lepidoptera: Sphingidae)

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**Abstract** The widely distributed east Asiatic species, *Amplypterus panopus* (Cramer), has been divided into three subspecies: *p. panopus* (Cramer) (Indian subcontinent to China, Sundaland), *p. celebensis* (Rothschild & Jordan) (Sulawesi) and *p. mindanaoensis* Inoue (Luzon, Mindanao). In addition to them *p. seramensis* subsp. nov. (Seram I.) is described. Moths and male abdominal sternite of all the subspecies are illustrated.

**Key words** Sphingidae, *Amplypterus*, nominotypical subspecies, subspecies-group, 8th sternite.

*Amplypterus panopus* (Cramer) is one of the most popular hawk moths from east Asia, remarkable in its gigantic size and peculiar maculation, the wingspan of large females surpassing 150 mm. Up to date three subspecies, *panopus*, *celebensis* (Rothschild & Jordan) and *mindanaoensis* Inoue, have been known, but a hitherto unknown easternmost population from Seram (or Ceram) will be described as a new subspecies, *seramensis* subsp. nov. In this paper geographical variation of all the subspecies will be described and illustrated.

This paper was prepared based on the rich sphingid collection of The Natural History Museum, London (abbreviated as BMNH), some specimens belonging to The National Science Museum, Tokyo, and some in my private collection.

From the maculation this species is divided into the following two subspecies-group, with a few exceptions:

Group 1: *p. panopus*, *p. mindanaoensis*. Forewing with blackish brown terminal border triangularly produced proximally at middle, distal shading of postmedian fascia narrow, nearly equidistant from costa to hindmargin.

Group 2: *p. celebensis*, *p. seramensis* ssp. nov. Forewing with blackish brown terminal border evenly rounded, distal shading of postmedian fascia more strongly extended distad, especially at dorsal area.

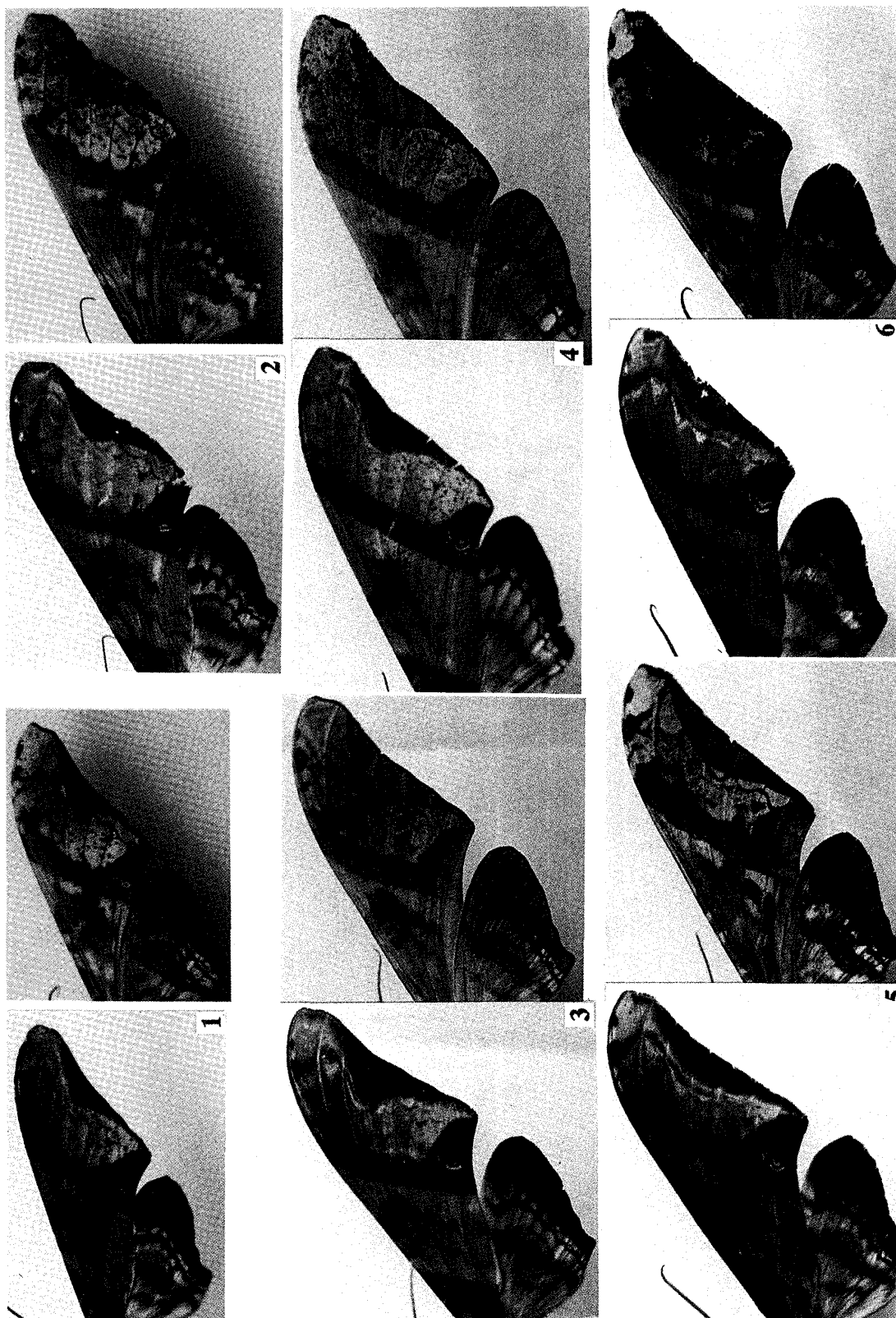
### *Amplypterus panopus panopus* (Cramer) (Figs 1, 2)

*Sphinx panopus* Cramer, 1779, *Uitlandsche Kapellen* **3**: 50, pl. 224: A, B.

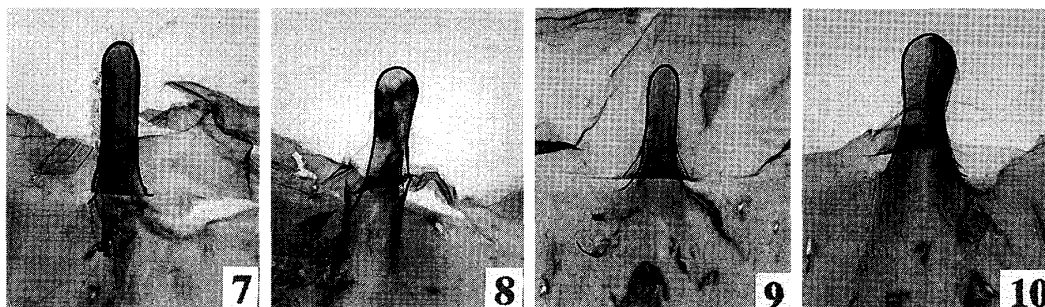
For references, cf.: Rothschild & Jordan, 1903: 189; Wagner, 1913: 84; Inoue, Kennett & Kitching, [1996]: 25.

Upper side. Forewing with terminal mark extremely narrow at apical area above Rs and tornal area below Cu<sub>2</sub>, the heavy discal bar paralleled proximally by a zigzag line. Hindwing with clear yellow spots proximally and distally bordering postmedian line.

Material examined. 22 specimens. Kanara & Travancore, S India. Naga Hills, Khasi Hills & N India. Pokhara, Nepal. Bhutan. Doi Inthanon, Sansai & Maetang, N Thailand. Hanoi, Vietnam. Canton, S China. Singapore. Cameron Highlands, Penin-



Figs 1-6. *Amphlypterus panopus*. 1. Subsp. *panopus* (Cramer), ♂ (Naga Hills). 2. *Ditto*, ♀ (Sri Lanka). 3. Subsp. *mindanaoensis* Inoue, ♂ (Panay I.). 4. *Ditto*, ♀ (Mindanao). 5. Subsp. *celebensis* (Rothschild & Jordan), ♂ (Sulawesi). 6. Subsp. *seramensis* nov., holotype ♂ (Seram I.).



Figs 7-10. *Amphypterus panopus*. Central process of male 8th abdominal sternite. 7. Subsp. *panopus*. 8. Subsp. *mindanaoensis*. 9. Subsp. *celebensis*. 10. Subsp. *seramensis* nov.

sular Malaysia. Lebeng Tandai, S Sumatra. Mt Gede, Java.

Distribution. Indian subcontinent to S China, Sri Lanka, Andamans, Sundaland (Peninsular Malaysia, Sumatra, Borneo, Java), Philippines (Bongao, Palawan).

The male holotype of *Calymnia pavonica* Moore from the Andamans (Moore, Coll. 94-106), BMNH, is a dark specimen with heavy spotting at the distal area of the forewing, but the general pattern is identical with the present subspecies. In BMNH there is a female, labelled: "N New Guinea. BM 1927-168". As the specimen exhibits the maculation of Group 1, I have omitted New Guinea from the range of distribution.

#### *Amphypterus panopus mindanaoensis* Inoue (Figs 3, 4)

*Amphypterus panopus mindanaoensis* Inoue, 1996, *Bull. natn. Sci. Mus. Tokyo* (A) **22**: 86; Hogenes & Treadaway, 1998, *Nachr. ent. Ver. Apollo*, Suppl. **17**: 19, 120. pl. 4: D.

Distinguished from the nominotypical subspecies by forewing with terminal border much more strongly produced inward.

Material examined. 17 specimens including the holotype and paratypes. Sagada & Laguna, Luzon. Mt Talomo, Motoklot & Gasy, Mindanao. Panay.

Distribution. Philippines (Mindoro, Luzon, Panay, Negros, Leyte, Mindanao). The detailed information about the distribution within the Philippines is shown by Hogenes & Treadaway (1998).

#### *Amphypterus panopus celebensis* (Rothschild & Jordan) (Fig 5)

*Compsogene panopus celebensis* Rothschild & Jordan, 1906, *Novit. zool.* **13**: 179; Seitz, 1928, *Macrolepid. World* **10**: 532.

Upper side. Forewing with discal bar less heavy, the zigzag line proximal to it more obscure than in the above two subspecies. The terminal mark much more slender, but much thicker between  $Cu_2$  and tornus. Hindwing with yellow marks inside and outside postmedian line obscurer.

Material examined. 8 specimens including the type-series. Tondano distr., Sawangan, Mt Tambusisi & Pulu Pulu, Sulawesi.

Distribution. Sulawesi.

D'Abrera ([1987]: 52, pl. [17]: [8, 9]) did not cite subspecies names and showed a male

(underside) and a female (upperside) probably from Sulawesi.

***Amphypterus panopus seramensis* subsp. nov.** (Fig. 6)

Upper surface with yellow subterminal area outside bluish wavy line narrower than in *celebensis*. Under surface with yellow areas more restricted, the yellow postmedian band less developed. Male 8th sternite (Fig. 10) with stick-like central process less slender than in the other subspecies.

Material examined. 3 ♂, holotype & paratypes: Amabai, Seram, 4–11. i. 1996, deposited in BMNH.

Distribution. Seram I., Indonesia.

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**摘 要**

*Amphypterus panopus* の地理的変異について (井上 寛)

*Amphypterus panopus* (Cramer) はインドから中国大陆、東南アジアに広く分布する大型のスズメガで、原名亜種のほか subsp. *celebensis* (Rothschild & Jordan) (スラウェシ) と subsp. *mindanaoensis* Inoue (フィリピン) の3亜種が知られていたが、本文で subsp. *seramensis* Inoue (セラム島) という新亜種を記載し、それぞれの特徴を述べた。今のところ分布の東限はセラム島だが、大英自然史博物館にはニューギニアというラベルのついた古い標本が一つある。斑紋の特徴が原名亜種とそっくりだしラベルに信用が置けないので、この標本のデータは採用しなかった。

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